18. What are byte streams and character streams in Java? Write a program to copy the content of one file to another.

19. Write a Java program that demonstrates handling keyboard events (key pressed, key released, key typed).

20. Describe the different Swing containers such as JFrame, iWindow, JDialog, and JPanel with examples.

Shanmuga Industries Arts & Science College
T.V.Malai

APRIL/MAY 2025

23USC31 — JAVA PROGRAMMING

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. List the main Object-Oriented Programming principles in Java.

2. What is the difference between the String and String Buffer classes?

3. What is inheritance in Java, and why is it used?

4. Define an interface in Java.

5. What is synchronization in Java, and why is it needed?

6. What is the difference between byte streams and character streams?

7. Address the purpose of the AWT in Java.

8. Mention the role of adapter classes in event handling.

9. What are top-level containers in Swing? Name any two.

10. What is the difference between JCheckBox and JRadioButton?

SECTION B — (5 × 5 = 25 marks)

Answer ALL the questions.

11. (a) Explain the key features of Java that make it platform-independent.

Or

(b) What are Java control statements? Explain if-else and switch with examples.

12. (a) How does Java handle access protection in packages? Provide an example.

Or

(b) Write a Java program to demonstrate method overriding using inheritance.

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13. (a) Write a Java program to create and start a thread using the Runnable interface.

Or

(b) Describe different types of stream classes in Java.

14. (a) Explain the AWT class hierarchy and its major components.

Or

(b) How can you handle mouse events in Java? Provide an example program.

15. (a) Explain the hierarchy of Swing components in Java.

Or

(b) Explain how to create a JCombBox and populate it with values in swing.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Explain the architecture of the JVM with a neat diagram and describe each component.

17. Describe exception handling in Java. Explain try, catch, throw, throws, and finally with an example program.